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# TROPICAL FOREST EDGE



This photograph shows the border between a Costa Rican cattle pasture and remnant tropical rain forest. As human impacts on the environment intensify, the future of plant and animal biodiversity will depend increasingly on the floras surviving in human-dominated “countryside” habitats. This photograph was taken while collecting data for the recent paper by M. M. Mayfield and G. C. Daily, in *Ecological Applications* 15(2): 423-439, April 2005, and the forthcoming paper by M. M. Mayfield, M. F. Boni, G. C. Daily, and D. Ackerly, in *Ecology* 86(10), October 2005. In our *Ecological Applications* paper, we examined the species richness and composition of herbaceous and shrubby plants in three common forested and three common deforested habitat types in three countryside landscapes in southern Costa Rica. We found that only ~18% of herbaceous and shrubby plant species were found in both forested and deforested components of these landscapes. Total richness on a per site basis was not lower in deforested than forested habitats, but each habitat supported a largely distinct flora, with riverbanks in forest and pasture being the most floristically similar forested and deforested habitat types. The uniqueness of the flora, in each habitat type suggests that heterogeneous countryside landscapes can and do support many native herbaceous and shrubby plant species.

In our upcoming *Ecology* paper, we explore the relationship between species and functional diversity in the same plant communities, in order to determine whether the functional diversity of herbaceous and shrubby plant communities and the ecological assembly rules acting on these communities differ. We found that the relationship between species richness and functional richness is not always strong, and that herbaceous and shrubby plant communities in deforested habitats do not necessarily contain lower functional diversity than in forest. Additionally, we provide evidence, based on species/functional trait state relationships, that ecological assembly processes differ significantly between forested and deforested plant communities. Results indicate that deforestation does more than remove species; it also alters the fundamental ecological processes acting on plant communities.

Look for the recent paper by M. M. Mayfield and G. C. Daily, “Countryside biogeography of Neotropical herbaceous and shrubby plants,” in *Ecological Applications* 15(2): 423-439, 2005, and the forthcoming paper by M. M. Mayfield, M. F. Boni, G. C. Daily, and D. Ackerly, “Species and functional diversity of native and human-dominated plant communities,” in *Ecology* 86(9), September 2005.